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REMARKS

Claims 1-6, 8-12 and 14-21 are pending in this application.

Claims 9-12 and 21 are withdrawn from consideration.

Claims 4 and 22 are objected to.

Claims 1-6, 8 and 14-20 are rejected.

The office action dated 1 December 2004 indicates that claim 22 contains allowable subject matter, but is objected to for depending from rejected base claim 1. Prior to the amendment above, claim 22 recited storing an entire image and background noise removal data, the stored image and the stored data made available for interactive processing; and providing user selection to allow the stored image to be rendered with and without background noise. In a first case of the user selection, the stored image and the stored data are used to remove background noise from the stored image prior to rendering the stored image. In a second case, background noise removal is bypassed in the stored image prior to rendering the stored image.

Claim 23 has been added to recite only the feature of storing entire image and background noise removal to allow a scanned document to be displayed with background noise removal and without background noise removal. Claim 22 has been amended to recite just the user selection.

Claim 23 is believed to be allowable over the documents made of record because none of the documents teach or suggest storing the entire image and the background noise removal data to allow the scanned document to be displayed with the background noise removed and without the background noise removed.

A user can display the document with the background noise removed and without the background noise removed. The user can then decide whether to

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print the document with or without the background noise. Nara does not teach or suggest such capability.

A particular advantage of the method of amended claim 1 concerns multi-page documents. Using the method of amended claim 1, the background noise removal data is available for each page. The user can decide whether to remove background noise on each page, after all of the pages have been scanned.

Figure 14 of Nara shows a copier 1 including a scanner 2 and a printer 3. The scanner 2 includes a shading unit 43, a background detection unit 46a, a background removal unit 52, and an exposure unit 22. The background detection unit 46a detects the background level (para. 136). The background removal unit 52 removes noise from the background, using the background level as a threshold (paragraphs. 150-151).

Nara does not teach or suggest storing background noise removal data and making the data available for interactive processing such that a user can render the stored image with and without background noise removal. Paragraphs 98 and 158 suggest that the user has an option of performing or not performing background noise removal prior to rendering. However, the user must make a hard choice. Either the background noise is removed, or it is not removed.   Once a new page is scanned in, the data is lost, and the choice can no longer be made. If a user decides to remove background noise at a later time, the page must be rescanned.

Claim 4 has been amended to depend from claim 23 instead of claim 22. Claim 8 still depends from claim 22.

Claim 15 has been amended to recite data storage for storing the image and the background noise removal data together to allow the scanned document to be displayed interactively with background noise removal and without

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background noise removal. Claim 15 should be allowed for the same reason that claim 1 should be allowed.

Claim 19, which depends from claim 15, has been amended to recite a user interface for allowing display of the scanned document with and without background noise removal. Claim 19 should be allowed for the same reason that claim 22 should be allowed.

Thus, claim 15 and its dependent claims 17-20 should be allowed over Nara alone.

The office action rejects claims 1-3, 5, 6, 8 and 14-20 under 35 USC 102(e) as being anticipated by Nara U.S. Publication 2002/0060819. Rejections of claims 15 and 17-20 have been rendered moot by the amendment above to claim 15. The '102 rejections of claims 1-3, 5, 6, 8, 14 and 16 are respectfully traversed.

Analysis of Nara was provided in a second amendment, which was filed Sept. 8, 2004. In the second amendment, it was argued that Nara does not teach or suggest producing statistical data. It was also argued that Nara doesn't teach or suggest deriving background removal data based on the statistical data. The analysis and arguments made in the second amendment are incorporated herein by reference.

The current office action responds to these arguments on pages 2-3. The office action cites paragraphs 136-142 of Nara, and states that Nara's clipping circuit reads on the feature "analyzing the image to obtain statistical data" and the circuit for generating threshold Dth1 reads on the feature "deriving background noise removal data for the entire image based on the statistical data."

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In paragraph 136, lines 7-8, Nara states that a clipping circuit 101 compares image data Drd0 to the threshold Dth1 and outputs image data Drd1. If Drd0 is greater than Dth1, the clipping circuit sets Drd1=Dth1 (that is, the clipping circuit 101 clips the image data). Otherwise, the clipping circuit 101 sets Drd1=Drd0. Nara does not teach or suggest that the clipping circuit 101 performs any sort of statistical analysis. If the examiner maintains that the clipping circuit analyzes the image to obtain statistical data, he is respectfully requested to identify that statistics that are produced by the clipping circuit. He is also respectfully requested to explain how the clipping circuit's comparator 111, selector 112, and OR circuit 113 perform statistical analysis.

Moreover, Nara does not teach or suggest that the statistical data can be a tonemap function or sampled values of the tonemap function (as recited in claim 3). The office action cites paragraphs 161-164. However, these paragraphs only discuss the threshold Dth1.

Paragraphs 139-140, Nara states that the threshold Dth1 is generated as a function of a background level Dba, an offset, and a factor a. Paragraph 136 states that background level Dba is generated by an offsetting unit 112. If the examiner maintains that the background level Dba, offset and factor a are statistics, then he is contradicting his earlier statement that the clipping circuit generates the statistics. Clarification is respectfully requested.

Thus, Nara does not teach or suggest each feature of claim 1. Therefore, claim 1 and its dependent claims 2-6, 8, 14, 16 and 22-23 should be allowed over Nara alone.

The office action also rejects claims 1, 14 and 15 under 35 USC 102(e) as being anticipated by Sakamoto U.S. Patent No. 6,603,880, and it rejects claim 1

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under 35 USC 102(e) as being anticipated by Harvill U.S. Publication 2003/0117392. These rejections are respectfully traversed.

Sakamoto describes a method of using image statistics (mean value and standard deviation in sectional images) to isolate a target image from a background. This allows the background to be removed such that only the target image remains. Sakamoto does not teach or suggest background noise removal.

Harvill is no more relevant that Nara and Sakamoto.

A substitute declaration is attached. The substitute declaration indicates the full name for inventor Marie Vans.

The examiner is respectfully requested to withdraw the rejections of the claims. The examiner is encouraged to contact applicant's attorney Hugh Gortler to discuss any issues that might remain.

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